



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/235,387	01/22/1999	NATALIE GIROUX	T012150011US(123081-33956	4794
27155	7590	11/03/2004	EXAMINER	
MCCARTHY TETRAULT LLP SUITE 4900, P.O. BOX 48 66 WELLINGTON ST. WEST TORONTO, ON M5K 1E6 CANADA			NGUYEN, PHUONGCHAU BA	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/235,387

**Applicant(s)**

GIROUX ET AL.

**Examiner**

Phuongchau Ba Nguyen

**Art Unit**

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### ***Claim Objections***

1. Claim 2 is objected to because of the following informalities: "connection oriented" should be deleted. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awdeh (5,754,530) in view of Fan (6,324,165).

#### **Regarding claim 1:**

Awdeh (5,754,530) discloses a method for transmitting non-real time traffic (ABR) in a communications network (fig.4), the network comprising a network core which includes a core source (A, B, C, D, E) and a core destination (A, B, C, D, E), the core source and the core destination having a path therebetween (the inter-switch link, fig.4), the path having one of a plurality of classes of transmission service (ABR), the non-real time traffic (ABR) being received at the core source (A, B, C, D, E) from a plurality of connections, the method comprising the steps of:

- (a) at the core source, aggregating the non-real time traffic received from said plurality of connections onto the path (via SW0, fig.4), the non-real time traffic being transmitted on the path without regard to which of the

Art Unit: 2665

plurality of connections the non-real time traffic is associated and without regard to the class of transmission service of such plurality of connections {fig.4, col.15, lines 53-55, 59-60};

- (b) at the core destination, segregating the non-real time traffic so transmitted on the path according to which of the plurality of connections the non-real time traffic is associated (via SW1, fig.4){col.15, lines 55-57};

wherein flow control is applied between the core source and the core destination to thereby regulate the rate of transmission of the non-real time traffic along the path the flow control terminating at said core source and at said core destination and wherein the path is provisioned with a guaranteed transmission bandwidth {col.15, lines 59-63}.

Awdeh does not explicitly disclose that each of the plurality of connections having one of the plurality of classes of transmission service, wherein at least two of the plurality of connections do not respectively have a same class of transmission service. However, in the same field of endeavor, Fan (6,324,165) disclose that each of the plurality of connections having one of the plurality of classes of transmission service (fig.3, CBR, rt-VBR, ABR, UBR), wherein at least two of the plurality of connections do not respectively have a same class of transmission service (fig.3, ABR and UBR){col.9, lines 1-64}. Therefore, it would have been obvious to an artisan to apply Fan's teaching to Awdeh's system with the motivation being to provide a guarantee bandwidth for

Art Unit: 2665

higher priority data (real time, CBR or rt-VBR) over the lower priority data (non-real time, ABR or UBR).

**Regarding claim 25:**

Awdeh discloses a communications network (fig.4) comprising a network core wherein traffic entering the network core is aggregated (via SW0,fig.4) from a plurality of connections (A, B, C, D, E) onto paths {col.15, lines 59-60} within the network core and wherein traffic exiting the network core is segregated (via SW1, fig.4) from said paths onto connections (A, B, C, D, E) outside the network core, the traffic comprising non-real time traffic, the non-real time traffic which enters the network core and is aggregated onto a path (inter-switch link) is received from connections (A, B, C, D, E), and the non-real time traffic being aggregated onto respective non-real time paths {col.15, lines 59-60}, each of the non-real time paths having one of the plurality of classes of transmission service, and wherein flow control is applied between the core source and the core destination corresponding to each non-real time path to thereby regulate the rate of transmission of the non-real time traffic along each said non-real time path, the flow control terminating at said core source and at said core destination corresponding to each non-real time path.

Awdeh does not explicitly disclose that the traffic comprising real time traffic and non-real time traffic, that each have one of a plurality of classes of transmission service such that at least two connections have classes of transmission service different from each other, the real time traffic being aggregated onto respective real time paths, each

Art Unit: 2665

of the non-real time paths having one of the plurality of classes of transmission service, each of the non-real time paths is provisioned with a guaranteed transmission bandwidth, the real time traffic on each real time path being transmitted from a corresponding core source to a corresponding core destination according to a first class of path transmission service and the non-real time traffic on each non-real time path being transmitted from a corresponding core source to a corresponding core destination according to a second class of path transmission service. However, in the same field of endeavor, Fan discloses that the traffic comprising real time traffic (CBR, VBR) and non-real time traffic (ABR, UBR) {fig.3}, that each have one of a plurality of classes of transmission service such that at least two connections have classes of transmission service different from each other (fig.3, real time such as CBR and VBR, and non-real time ABR and UBR), the real time traffic and the non-real time traffic each being aggregated onto respective real time paths and non-real time paths {since the non-real time and real time data being applied to Awdeh's system, thus both non-real time and real time being aggregated by SW0 onto inter-switch link, col.15, lines 59-60 in Awdeh, emphasis added}, each of the non-real time paths having one of the plurality of classes of transmission service (thus, each non-real time such as ABR or UBR was being transmitted on a particular of VC of the inter-switch link, col.15, lines 59-60 in Awdeh, emphasis added), each of the non-real time paths is provisioned with a guaranteed transmission bandwidth, the real time traffic on each real time path being transmitted from a corresponding core source to a corresponding core destination according to a first class of path transmission service and the non-real time traffic on each non-real

Art Unit: 2665

time path being transmitted from a corresponding core source to a corresponding core destination according to a second class of path transmission service {col.9, lines 1-64}. Therefore, it would have been obvious to an artisan to apply Fan's teaching to Awdeh's system with the motivation being to provide a guarantee bandwidth for higher priority data (real time, CBR or rt-VBR) over the lower priority data (non-real time, ABR or UBR).

-As Claim 2, Awdeh discloses an ATM network {abstract, line 1}, the non-real time traffic is ATM traffic and plurality of classes of transmission service are ATM service categories {abstract, lines 1-3, col.10, lines 5-14}, the plurality of connections are Virtual Channel Connections (VCCs)s {col.15, lines 59-60}. Awdeh does not explicitly disclose the path is a non-real time Virtual Path Connection (VPC). However, in the same field of endeavor, Ma (5,953,338) disclose that the path is a non-real time Virtual Path Connection (VPC) {fig.6, col.1, line 66 to col.2, line 38}. Therefore, it would have been obvious to an artisan to apply Ma's teaching to Awdeh's system with the motivation being to provide a specific path for transferring a specific type of data (i.e., non-real time on the non-real time virtual path) across the virtual connections between ATM switches {col.11, line 59-col.12, line 14; fig.6, Ma}.

-As claim 3, Awdeh further discloses wherein the flow control applied between the core source and the core destination includes a flow control algorithm whereby the rate of transmission of the non-real time traffic on the path is regulated by providing feedback

Art Unit: 2665

information to the core source concerning congestion at a contention point on the path {col.2, line 4-col.3, line 55; col.6, lines 60-65}.

-As claim 4, Awdeh further discloses wherein the flow control applied between the core source and the core destination includes a flow control algorithm whereby the rate of transmission of the non-real time traffic on the path is regulated by providing an explicit rate of transmission to the core source {col.5, line 11-col.6, line 22; col.6, line 66-col.7, line 10; col.7, line 64-col.8, line 12}.

-As claim 5, Awdeh further discloses wherein the non-real time Virtual Path Connection operates according to an Available Bit Rate (ABR) service category {col.13, lines 36-46}.

-As claim 6, Awdeh does not explicitly disclose wherein at least one of the plurality of connections aggregated onto the path is provisioned with a guaranteed bandwidth and the guaranteed transmission bandwidth of the path is obtained by summing the guaranteed transmission bandwidths for the at least one of the plurality of connections aggregated onto the path. However, in the same field of endeavor, Fan further disclose wherein at least one of the plurality of connections aggregated onto the path is provisioned with a guaranteed bandwidth and the guaranteed transmission bandwidth of the path is obtained by summing the guaranteed transmission bandwidths for the at least one of the plurality of connections aggregated onto the path {col.9, lines 1-37}.



Art Unit: 2665

Therefore, it would have been obvious to an artisan to apply Fan's teaching to Awdeh's system with the motivation being to avoid interruption in data transmission of real-time data (i.e., CBR), which has priority over the non-real time data (i.e., ABR).

-As claim 7, Awdeh does not explicitly disclose wherein the guaranteed transmission bandwidth for the at least one of the plurality of connections is a guaranteed minimum transmission bandwidth and the guaranteed transmission bandwidth for the path is a guaranteed minimum transmission bandwidth. However, in the same field of endeavor, Fan further discloses wherein the guaranteed transmission bandwidth for the at least one of the plurality of connections is a guaranteed minimum transmission bandwidth and the guaranteed transmission bandwidth for the path is a guaranteed minimum transmission bandwidth {col.9, lines 23-25}. Therefore, it would have been obvious to an artisan to apply Fan's teaching to Awdeh's system with the motivation being to provide guarantee data transmission of the real-time data (i.e., CBR) even under congestion conditions {also, col.9, lines 23-35}.

-As claim 8, Awdeh does not explicitly disclose wherein transmission bandwidth in the network core is allocated between real time traffic and non-real time traffic, and wherein a share of the transmission bandwidth in addition to the guaranteed minimum transmission bandwidth for the path is made available to the path if the transmission bandwidth allocated to the real time traffic is unused. However, in the same field of endeavor, Fan's further discloses wherein transmission bandwidth in the network core is

Art Unit: 2665

allocated between real time traffic and non-real time traffic, and wherein a share of the transmission bandwidth in addition to the guaranteed minimum transmission bandwidth for the path is made available to the path if the transmission bandwidth allocated to the real time traffic is unused {col.9, lines 25-28, 42-51}. Therefore, it would have been obvious to an artisan to apply Fan's teaching to Awdeh's system with the motivation being to ensure the transmission of real-time data (i.e., CBR) even under congestion conditions without interruption.

-As claim 9, Awdeh does not explicitly disclose wherein a share of the transmission bandwidth in addition to the guaranteed minimum transmission bandwidth for one of the plurality of connections is made available to the one of the plurality of connections if the transmission bandwidth allocated to another of the plurality of connections is unused. However, in the same field of endeavor, Fan further discloses wherein a share of the transmission bandwidth in addition to the guaranteed minimum transmission bandwidth for one of the plurality of connections is made available to the one of the plurality of connections if the transmission bandwidth allocated to another of the plurality of connections is unused {col.9, lines 46-48}. Therefore, it would have been obvious to an artisan to apply Fan's teaching to Awdeh's system with the motivation being to maximize the bandwidth utilization.

-As claim 10, Awdeh further discloses wherein the core source to core destination flow control applied between the core source and the core destination is provided by a

Art Unit: 2665

plurality of ABR flow control segments between the core source and the core destination {col.2, lines 4-52}.

-As claim 11, Awdeh further discloses wherein the core source further comprises a set of queues each corresponding to one of the plurality of classes of transmission service that are associated with the plurality of connections, and wherein the non-real time traffic received over said each of the plurality of connections is queued in the queue associated with the class of transmission service associated with each connection before aggregating the non-real time traffic onto the path {col.10, lines 5-14}.

-As claim 12, Awdeh further discloses wherein the core source further comprises a queue for said each of the plurality of connections and wherein the non-real time traffic received over said each of the plurality of connections is queued in the queue associated with the connection before aggregating the non-real time traffic onto the path {col.10, lines 5-14}.

-As claim 13, Awdeh further discloses wherein traffic management is applied to the non-real time traffic at said core source {col.2, lines 4-col.7, line 40-col.8, line 4}.

-As claim 14, Awdeh does not disclose wherein the traffic management comprises scheduling of the plurality of connections onto the path. However, in the same field of endeavor, Fan discloses wherein the traffic management comprises scheduling of the

Art Unit: 2665

plurality of connections onto the path {col.3, lines 24-53; fig.3; col.7, lines 58-59; col.9, lines 23-25, 44-46; col.9, line 65-col.10, line 23}. Therefore, it would have been obvious to an artisan to apply Fan's teaching to Awdeh's system with the motivation being to ensure that each queue (input) flow receives its minimum guaranteed rate and hence the QoS is guaranteed for all connections within the flow.

### ***Response to Arguments***

4. Applicant's arguments filed 7-19-04 have been fully considered but they are not persuasive.

A/. Applicant argued that Awdeh does not teach aggregation of non-real time traffic received from a plurality of connections onto a path "without regard to which of the plurality of connections the non-real time traffic is associated and without regard to the class of transmission service of such plurality of connections".

In reply, Awdeh discloses in figure 4 wherein five VCs (A, B, C, D,E) shared on one inter-switch link, thus the five VCs (A, B, C, D, E) are aggregated on to a path (inter-switch link) without regard to which of the plurality of connections the non-real time traffic is associated and without regard to the class of transmission service of such plurality of connections.

B/. Applicant argued that flow control in claims 1 and 25 is applied to the entirety of the aggregated non-real time traffic along the path between the network core source and the network core destination.

Art Unit: 2665

In reply, Awdeh discloses teaching of RM (resource management) cells, which travels from source to destination {col.2, lines 9-12}, for controlling traffic of connection {col.3, lines 6-8; also see section 5 (Forward RM Cell Process; col.11, line 21-63; col.14, line 66-col.15, line 16) and section 6 (Backward RM Cell Process; col.11, line 64-col.14, line 43; col.15, lines 17-43)}

C/. Applicant argued that Fan does not relate at all to a network architecture but rather to the architecture of a switching device. This is not the same field of endeavor.

In reply, Awdeh's system is an ATM network {abstract, line 1} and Fan's subject invention relates to ATM networks {col.1, lines 10-11}

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2665

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose telephone number is 571-272-3148. The examiner can normally be reached on Monday-Friday from 10:00 a.m. to 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-31556602. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.



Phuongchau Ba Nguyen  
Examiner  
Art Unit 26655

**DUCHO**  
**PRIMARY EXAMINER**



10-29-04